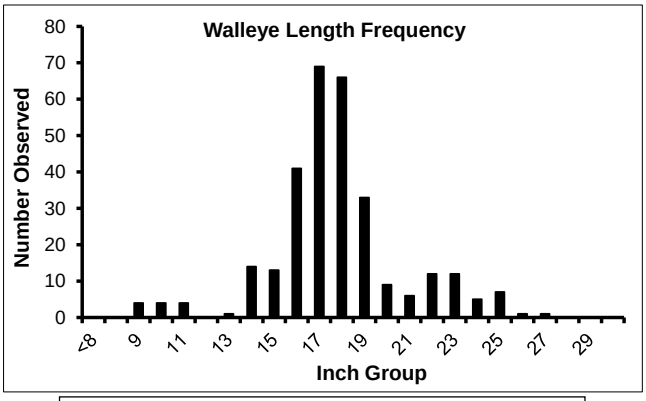
WISCONSIN DNR
FISHERIES INFORMATION SHEET

LAKE: Roberts Lake **COUNTY:** Forest **YEAR:** 2016-17

The Wisconsin Department of Natural Resources conducted a two-year (2016-17) comprehensive survey of Roberts Lake, Forest County, to analyze the health of its fishery. Roberts Lake is located approximately 10 miles southeast of Crandon, with boat access off of MacArthur Trail. Roberts Lake covers 415 acres and achieves a maximum depth of 32 feet.



* Note: Adult walleye are defined as all sexually mature fish and all fish of unknown sex ≥ 15 inches long.

Walleye

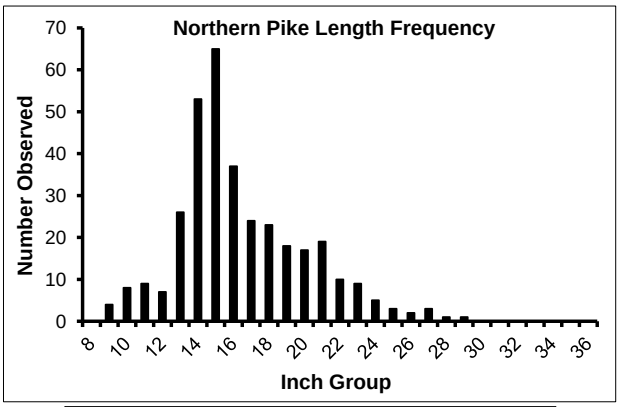
A mark-recapture survey was conducted to estimate the abundance of adult walleye in Roberts Lake during 2017. Over a four day period in April, a total of 285 different adult walleye were captured during fyke net and electrofishing surveys. Based on our survey data we estimate the adult walleye population in Roberts Lake to be approximately 625 fish (1.5/acre). Previous surveys suggest that the current population is at an all-time low, well below the long term average of 4.2 adults/acre for Roberts Lake. The walleye population has been declining, due to significantly reduced natural reproduction, since 1993. While walleye abundance is very low compared to past populations in Roberts Lake, the adult density is still at a level that is considered acceptable for stocked walleye waters in this area.

Every walleye captured during our spring survey, 302 fish, was measured to assess size structure. The size structure of the walleye population in Roberts Lake is considered good with approximately 92.3% of the population being ≥ 15 inches and 17.8% ≥ 20 inches . The largest walleye captured during the walleye portion of our survey was 27.0 inches.

Northern Pike

Like walleye, adult northern pike were captured and marked with an identifiable fin clip during the walleye netting portion of our survey in 2017. A second sample of northern pike was captured during the walleye recapture and muskellunge netting survey in 2017 to estimate the size of the adult (≥ 12 inches) population in Roberts Lake. The data collected this year estimates the adult population to be approximately 3,052 fish (7.4/acre), an extremely high abundance of northern pike. In fact, the Roberts Lake population is currently the most dense population of adult northern pike in Florence and Forest Counties.

Every Northern Pike captured during the 2017 survey was measured to assess size structure. The size structure of northern pike population is considered extremely poor, with only 18.3% of the fish sampled being ≥ 21 inches, and 0.7% ≥ 28 inches in length. The largest northern pike captured during our survey was 29.7 inches long.



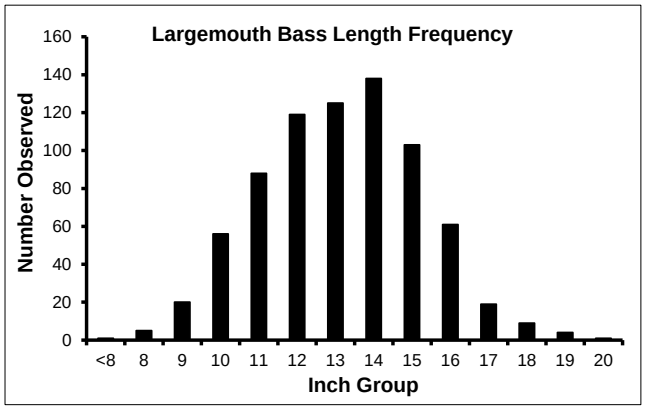
* Note: Adult northern pike are defined as all sexually mature fish and fish of unknown sex ≥ 12 inches long.

Largemouth Bass

Largemouth bass were captured during our muskellunge fyke net survey in 2016, and 4 spring electrofishing surveys from 5/2 to 5/18/2016. During these surveys a total of 478 different largemouth bass were given an identifiable fin clip. These fish were allowed to mix back into the population before we conducted our "recapture" survey on 5/24/2016. During the recapture survey a total of 315 largemouth bass were captured, with 44 fish bearing the fin clip given during the "marking" survey. The data obtained from our bass surveys estimate the largemouth bass population (≥ 8 inches) to be approximately 3,780 fish. At approximately 9.1 adults/acre the Roberts Lake population is considered overly abundant. In fact, the Roberts Lake population is the most abundant largemouth bass population in Florence and Forest Counties, when compared to all lakes ≥ 200 acres.

A total of 749 different Largemouth bass were captured and measured to assess the size structure of the population. Roberts Lake largemouth bass have a moderate-to-poor size structure with approximately 44.8% of the largemouth bass captured being ≥ 14 inches and 1.9% ≥ 18 inches.

Poor size structure in high density populations is common. When considering the extremely high density of this population, the size structure of the largemouth bass population is surprisingly good. However, this population was of low abundance when last evaluated in 1999, suggesting a fairly recent increase in abundance. If this population sustains itself at the current abundance size structure will likely decrease substantially in the near future.

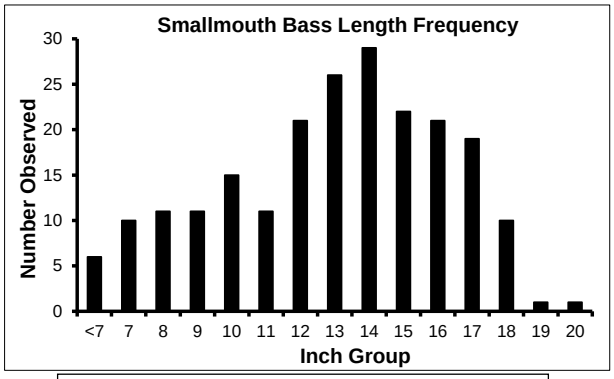


* Note: Adult bass are defined as all bass ≥ 8 inches long.

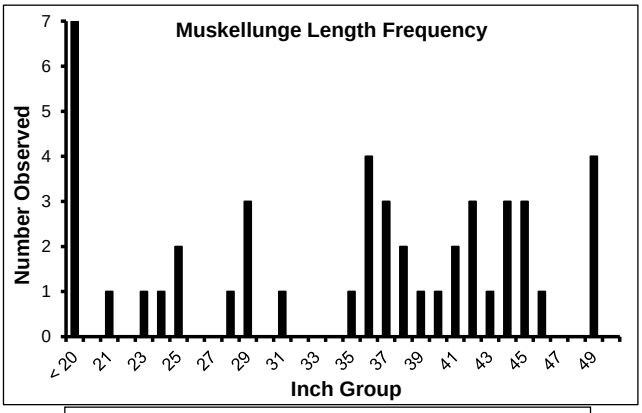
Smallmouth Bass 

During the same surveys conducted for largemouth bass, we also captured smallmouth bass to estimate their abundance in Roberts Lake. A total of 96 different smallmouth bass were captured during the "marking" survey and given an identifiable fin clip. During the "recapture" survey, a total of 119 smallmouth bass were captured, with 17 fish (14%) bearing a clip from the "marking" survey. Based on these data we estimated the smallmouth bass population (≥ 8 inches) to be approximately 754 fish. At approximately 1.8 adults/acre this is considered a moderate abundance of smallmouth bass.

A total of 214 different smallmouth bass were captured and measured to assess size structure during our survey. The size structure of the Roberts Lake smallmouth bass population is considered good with approximately 49.5% being ≥ 14 inches and 14.9% ≥ 17 inches.



* Note: Adult bass are defined as all bass ≥ 8 inches long.



* Note: Adult muskellunge are defined as all fish ≥ 30 inches long.

Muskellunge 

It is a two year process to estimate the abundance of muskellunge in a given waterbody. During 2016 a total of 35 different muskellunge were captured and marked with an identifiable fin clip and internal tag. Of the 35 fish marked in 2016, only 23 fish were ≥ 30 inches, and considered an adult. A second sample of 20 muskellunge, with 14 being adult fish, was captured during 2017. Of the 14 adult fish captured in 2017, 8 fish (57%) bore the mark given during the 2016 surveys. This data estimates the adult (≥ 30 inches) population to be approximately 38 fish (0.09/acre), which is considered a very low density of muskellunge.

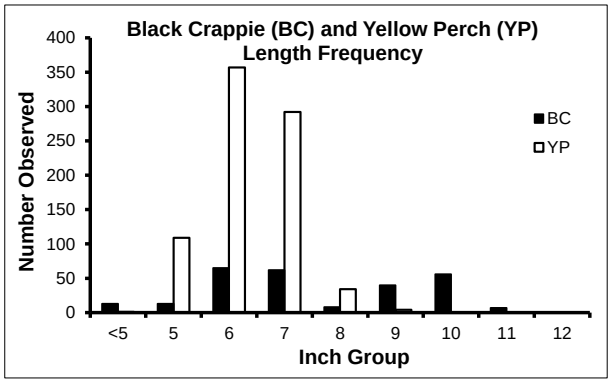
A total of 46 different muskellunge were captured during the two year survey. All of these fish were measured and the length of initial capture was used to assess the size structure of the population. After excluding the fish captured < 20 inches, 46.2% of the muskellunge captured were ≥ 40 inches, and 20.5% were ≥ 45 inches, with the largest fish captured being 49.7 inches long. The size structure of the Roberts Lake muskellunge population is well above average.

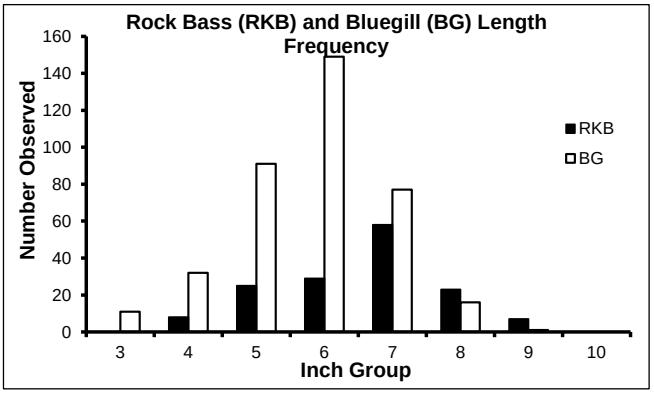
Yellow Perch  **and Black Crappie** 

The early spring netting survey and the muskellunge netting surveys were used to assess abundance of yellow perch and black crappie in Roberts Lake.

Relative abundance of yellow perch was measured at 1.7 fish per net-night net during early spring, and an average of 7.5 fish per net-night during the muskellunge netting survey. Black crappie abundance was 1.3 and 1.4 fish per net-night during the same surveys. Yellow perch are considered to be of moderate abundance, while black crappie are of low abundance, when compared to other populations in the area.

Random samples of 797 yellow perch and 265 black crappie were measured to assess the size structure of their populations. Yellow perch size structure is moderate to poor with 41.4% and 4.8% of the fish being ≥ 7 and 8 inches repectively. Black crappie size structure is good with 44.4% and 25.4% of the fish being ≥ 8 and 10 inches respectively.





Bluegill  **and Rock Bass** 

Nets were set in early June 2016 to assess the summer spawning panfish populations in Roberts Lake. Bluegill are the most abundant summer spawning population with an abundance of 37.3 fish per net-lift, while rock bass were the 2nd most abundant species at 14.6 fish per net-lift. Bluegill abundance is considered moderate, while rock bass are considered abundant when compared to other populations in the area.

Random samples of 377 bluegill and 150 rock bass were measured to assess the size structure of their populations. Bluegill have a moderate size structure with 64.5% and 4.5% of the fish being ≥ 6 and 8 inches respectively. Rock bass also have a moderate size structure with 58.7% and 4.7% being ≥ 7 and 9 inches respecitvely.

Other Species

The species listed above were the focus of the 2016-17 survey, with surveys designed to best sample these individual species. Other species captured during our survey efforts include; pumpkinseed, hybrid bluegill, black bullhead, white sucker, and golden shiner. Based on catch rates and observations during this two year survey, pumpkinseed are of moderate abundance, hybrid bluegill, white sucker, and golden shiner are of low abundance, and black bullhead are rare.

This report is interim only; data and findings should not be considered final.
For answers to questions about fisheries management activites and plans for Roberts Lake contact:

Greg Matzke, Fisheries Biologist
Wisconsin Department of Natural Resources
(715) 528-4400 **Ext:** 122 Email: Gregory.Matzke@Wisconsin.gov